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(74) Agent: SPATH, Thomas, E.; Abelman, Frayne & Schwab, 150 East 42nd Street, New York, NY 10017-5612 (US).

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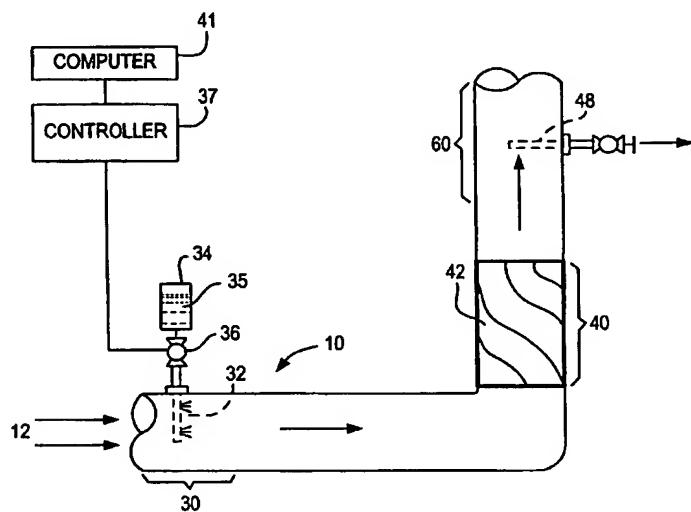
(71) Applicant (for all designated States except US): SAUDI ARABIAN OIL COMPANY [SA/SA]; R-3296, Administration Building, Dharan 31311 (SA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): HASSELL, James, Clyde, Jr. [US/SA]; 552 Jurayd Ct., Dhahran 31311 (SA).

[Continued on next page]

(54) Title: MULTI-PHASE FLUID SAMPLING METHOD AND APPARATUS



WO 2004/062783 A3

(57) Abstract: The invention provides a method for producing a homogenous sample of a pressurized fluid stream flowing in a pipeline, the fluid stream consisting of a majority component of hydrocarbon gas, the remainder consisting of one or more hydrocarbon liquids and water in the form of vapor, aerosols, droplets and/or liquid streams, the method includes the steps of: a. injecting one or more surface active agents into the fluid stream in an injection zone at a rate that is sufficient to form a uniform foam of the gas and the one or more hydrocarbon liquids and water components; b. mixing the one or more surface active agents with the fluid stream in a mixing zone to form a uniform foam composition flowing in the pipeline downstream of the mixing zone; c. withdrawing a portion of the foam composition from the pipeline at a sampling point; d. passing the portion of the foam composition withdrawn through a sampling loop; and e. removing a sample of predetermined volume of the foam composition from the sampling loop for analysis.



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A. CLASSIFICATION OF SUBJECT MATTER

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US CL : 436/180

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B. FIELDS SEARCHED

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
436/25, 174, 176

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|---|-------------------------|
| X | US 5,190,103 A (GRISTON et al) 02 March 1993 (01.03.1993), column 2, line 65 - column 3, line 3; column 3, lines 55-68; column 4, lines 22-26. | 16, 17, 19, 21, 22, 24 |
| — | | ----- |
| Y | US 5,597,950 A (MULLEN) 28 January, 1997 (28.01.1997), column 2, line 57 - column 3, line 10; column 3, lines 51-64. | 1-15, 18, 20, 23, 25-32 |
| | | 1-32 |

Further documents are listed in the continuation of Box C.

See patent family annex.

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Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Faxsimile No. (703)305-3230

Authorized officer

Jill A. Warden

Telephone No. 703-308-0661